TISTRUCTION COORDINATING DEF FRE POFESENCE TO LONG COMMON CONTRACTOR OF THE POPESE OF T

December 22, 1971

Port of Portland

Box 3629 Folliand, Oregon 27468

503/200 8321

TWX 910 484 6151 FAX FDIT

Portland General Electric Company 621 S. W. Alder Portland, Oregon 97205

Attention: Mr. Duane Landis

PAYMENT FOR DREDGE MATERIAL

Attached is our invoice in the amount of \$35,125 covering the placement of 672,500 cubic yards of material from the 40-foot channel on your property near Linnton.

As you know, we have left the spillway in place since your office has mentioned the possibility of additional filling to complete the area.

We will agree to leave the spillway on your property until December 31. 1972, and have included the cost of removing the spillway at that time in the attached invoice. If your plans change prior to that date, it is requested that you advise us so that we can remove the spillway.

We appreciate your cooperation on this project and look forward to visiting the substation constructed on the newly filled land.

Heineman

Assistant Director, Marine

Attachment

off cas electin Tairya,

INVOICE

ELE REFERENCE NO. 441-21-1

THE PORT OF PORTLAND

IN ACCOUNT

-

P. O. BOX 3529 PORTLAND, OREGON 97208

DATE Recember 23, 1971

INVOICE NO. 35236

Portland General Electric Co. 621 S. W. Alder Fortiami, Oregon 97205

ORDER NO.

74103 Atta: Mr. Duame Landle

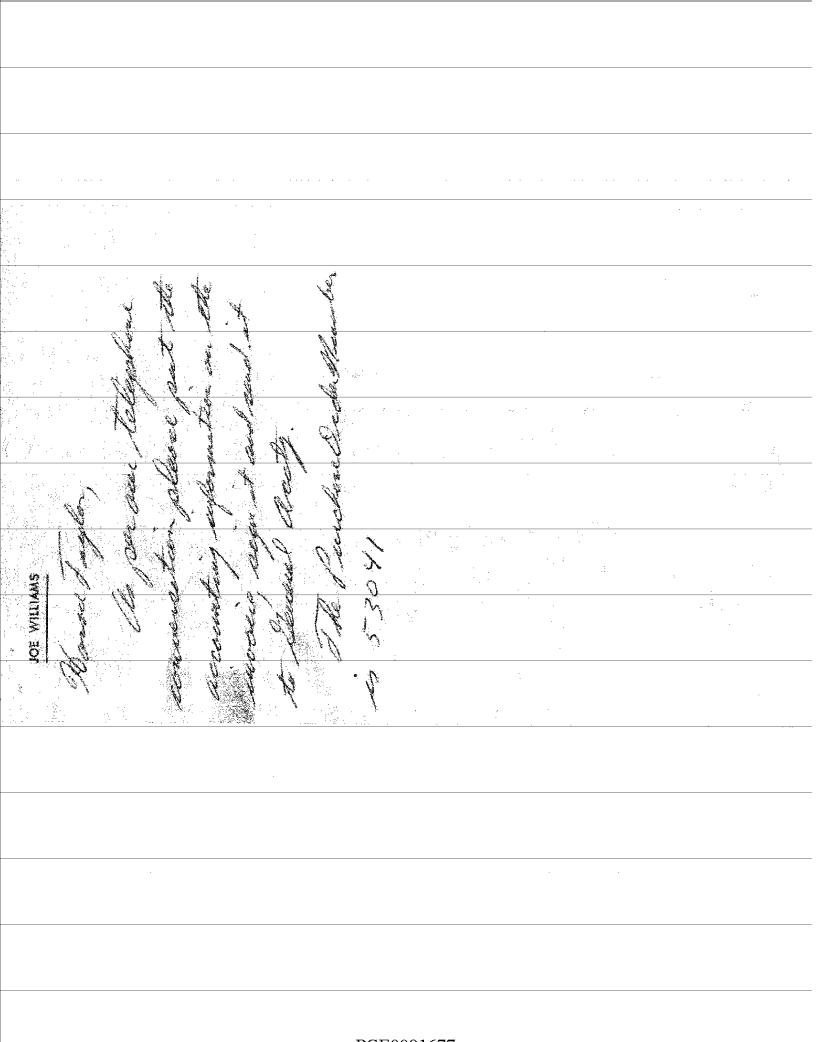
Payment for placement of 40 foot channel dredging material on your property mean Linuten per agreement:

Syllivay Construction and removal 672,590 c.y. 8 90.05

\$ 1,560.00 33,625.00

TOTAL

\$ 35,125.00



CONSTRUCTION DESIGNATING DEFT.

PORTLAND GENERAL ELECTRIC COMPANY

621 S. W. ALDER STREET PORTLAND, OREGON 97205

No.

53041

9-64-5500 PURCHASE ORDER

BJEC I	-	"HE ON HEAR			
	ţ	Fort	OS PC	artland	
		P. O.			
		Porti	anó,	Gregon	

DATE JOHNSTY 1, 1973

PLEASE SHIP TO PORTLAND GENERAL ELECTRIC COMPANY

97203

PLEASE PLACE ORDER NUMBER ON ALL PACKAGES, INVOICES AND MEMORANDA

CAPE OF

H. I. Taylor

SRI I. W. RIGOT ICEOUR

Portland, Oregoe

AND MAIL INVOICES IN TRIPLICATE TO GENERAL ACCOUNTING DEPT., 203 ELECTRIC BLDG. 621 S. W. ALDER ST., PORTLAND, OREGON 97205

QUANTITY	DESCRIPTION	CODE	PRICE
	Furnish all labor, tools, equipment, transports and supervision and parform all work required to place dradged material on FGZ Co. Harborton Subsite. Payment will be in accordance with Right of Intry and Spoil Disposel Formit dated August 1, 1971, which by resovence is made part of the Purchase Order.	o estation t	
	Cost to PG: Co.1		
	Spillway construction and removal		1500.00 Lat we
	672,500 cubic yarda		.65 (24. 24
	Confirming		
SHIPMENT	PORTLAND GENE	RAL ELECTRIC	COMPADAY

CASH TERMS

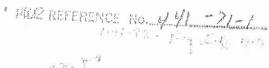
蒙 急告

F. O. B. FREIGHT ALLOWANCE:

DIRE

DIRECT TRUPHONE CALLS TO MR. L. D. MORTES

ITEM NO.	COLE	FUNCTION NO	JOB NO.	CLASS		THE SECTION IS NOT LOAD I A LOS	
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Foot of N. Portsmouth Ave., Portland, Oregon 97203 Phone: 503 • 285 - 9111 • Cable Address WILDWEST

January 5, 1972

Portland General Electric Company 621 S. W. Alder Street Portland, Oregon 97205

Attention: Mr. Johnson

Re: Filling of Linnton Land

Gentlemen:

We have completed the testing for materials in the Linnton Area and are enclosing a copy of the test results. We found clay and mud on the whole West side and below your submarine cables for the full width. The material above the cables was fair to good with no clay but some silt. We feel the material will make good fill and can be used to finish the grading of your property.

Our proposal to do the filling is as follows.

- We will build dikes on the high ground and do all other work on land to accommodate 100,000 cubic yards of sand.
 We will extend the ladder on the dredge and do all the other things required for mobilization and demobilization.
 Our lump sum price for this work is . . . \$28,000.00
- We will pump sand onto the property, take care of all shore costs including cats, and survey the stockpile at the end. Payment will be on the basis of stockpile measurement. Our price for the sand will be \$0.59 per cubic yard.

Thank you for the opportunity to quote this work. If you have any questions, please contact us.

Respectfully,

WESTERN-PACIFIC DREDGING CORP.

R. W. Lofgren Vice President

RWL:de

WILLAMETTE HI-GRADE CONCRETE CO.

WESTERN-PACIFIC DREDGING CORP. WESTERN-PACIFIC PILEDRIVING CO.

Ship Assisting 6 Towing 9 Barging 6 Land and Water Cranes 9 Marine Salvage 6 Hydroulic, Bucket and Clamshell Dredging 9 Collections
Submaring Pipelines 9 Land Reclamation 9 Marine Construction 9 Piledrising 9 Intales and Outfalls 9 Land and Water Substructures
Readymix Converse 9 Sans and Gravet 9 Crushed Rock 9 Fill Material 9 Truck-Pail Darge Delivers

PGE0091680

8-40-265

INTER-OFFICE COMMUNICATION PORTLAND GENERAL ELECTRIC COMPANY

FILE REFERENCE NO. 111-11-1

Date January 13, 1972

To

H. I. Taylor

From

S. R. Christensen

Subject

Placement of Pumped Fill at Harborton

It has been determined the fill that will be pumped onto this site by Willamette Western should be placed on the area presently at elevation 28 with appropriate dikes prepared from the existing material on site. The attached sketch shows proposed location.

SRC/DRL/sg Attachment c: D. R. Miller

TOTAL TOTAL

PORTLAND GENERAL ELECTRIC COMPANY

621 S. W. ALDER STREET PORTLAND, OREGON 97205

8-30-350 9-64-5500

No. 53599

PURCHASE ORDER SUBJECT TO CONDITIONS ON REVERSE SIDE

Ventem-Pasific Fredring Corp. Foot of M. Yorksmouth Avenue Fortland, Oregon 97203

PLEASE SHIP TO PORTLAND GENERAL ELECTRIC COMPANY

PLEASE PLACE ORDER NUMBER ON ALL PACKAGES, INVOICES AND MEMORANDA

CARE OF

M. E. Taylor 621 S. S. Mider Street Partlevel, in seen

AND MAIL INVOICES IN TRIPLICATE TO GENERAL ACCOUNTING DEPT., 203 ELECTRIC BLDG. 621 S. W. ALDER ST., PORTLAND, GREGON 97205

QUANTITY CODE Furnish all labor, tools, equipment, transports ion and supervision and perform all work required to place looded out yet of dredged material on Mil to harboring Substation site. Payment will be in accordance with your letter proposal dated January 5, 1972, which by reference to made part of this purchase order. Cost to RE Co. achilisat on and devolitization. S. S. C. C. C. C. C. C. C. Pump sand on to property lackeding building diker and all chort costs. Payment to be on stockpile measurement . 59 Cit., Yes. Mer 27 1 1 1 1 John 15

14			

AN SOME DE DESENDE

PORTLAND GENERAL ELECTRIC COMPANY

CASH TERMS 30-1

FOR

EPEGHT ALLOWANCE

DIRECT TELEPHONE CALLS TO MR ... CLOUT AND BUTER

(プラレル)	FUNCTION NO.	JOE NO	CLASS	ACCOUNT NUMBER	REQUISITION NO.
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DATA SHOWS DIFFERENCE IN ELEVATION OF EACH POINT FROM THE LAST READING TAKEN ON JANUARY 24, 1972.

* LAST READING TAKEN ON DECEMBER 30, 1971.

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6+00	5.38	7.88	8.09	9.19	DATTA
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TOTAL OF PAGE 1: 2,761,306.00 CU.FT. = 102,270.59 CU.YPS

TOTAL OF PAGE 2: 275,050,00 CU.FT. = 10,189.03 CU.YPS

TOTAL ESTIMATED FILL (PAGE (+PAGE 2) 3036,356.00 CU.FT

ADDITIONAL DATA ON PAGE 2 = 7/112,457.62 CU.YDS.

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TOTAL PAGE 2: 275,050,00 CU. FT. = 10,187.03 CU. YOS.

BYMEB

~ V

February 8, 1972

Western-Pacific Bredging Corporation Foot of M. Portsmouth Avenue Portland, Oragon 97203

Attention: Mr. R. W. Lofgran

Subject: MARBURTON SUB SITE DREDSING

Gentlemen!

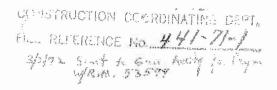
Enclosed for your records find two copies of the Corps of Engineers' authorization for dradging of approximately 100,000 cubic yards of material for use on our Harborton site.

Sincerely,

W. E. Johnson Project Engineer

WEJ:dw Enclosure (10), 25% / 70% / 70% / 70%





TDESTERN-PACIFIC DREDGING COMP.

Subsidiary of WILLAMETTE WESTERN CIRPOPATION

Foot of N. Portsmouth Ave , Portland, Oregon 97203 Phone: 503 · 285 · 9111 · Cable Address: WILDWEST

Job Location: Harborton Substation Site

Date:

February 25, 1972

Sold to: Portland General Electric Go.

Your No.: 53599

621 S. W. Alder Street Portland, Oregon 97205

Invoice No: 2-5/9236

Attention: Mr. H. I. Taylor

Furnish labor and equipment to place dredged material on : GE Co. Harborton Substation site.

113,790 cubic yards @ \$.59/cu. yd.

\$67,136,10

Mob and demob: Lump Sum

28,000.00

TOTAL

\$95,136,10

OIL (45 JOHNSON 3-1-72

P.D. 53549 56-5160-4921-9-352

JAMES A

WILLAMETTE TUG & BARGE CO WILLAMETTE HI-GRADE CONCRETE CO WESTERN-PACIFIC DREDGING CORP. WESTERN-PACIFIC PILEDRIVING CO.

Ship Assisting . To ong . Batging . Land and Water Crimes. . Marine Salvage. . Hydradic, Bucket and Clanishell Gredging . Cofferdam. Submissione Pipelines * Land Peclamation * Marine Construction * Piledriving * Intakes and Outfalls * Land and Water Substitutions Readymo. Concrete . Spen and Gravel . Crush d Rock . Fill Material . Truck that Barga Datuery

PORTLAND GENERAL ELECTRIC COMPANY

621 S. W. ALDER STREET PORTLAND, OREGON 97205

8-30-350 9-64-5500

PURCHASE ORDER

Crosswhite Excavating, Inc. 6641 S. E. Johnson Creek Boulevard Portland, Oregon 97206

DATE

January 12, 1972

PLEASE SHIP TO PORTLAND GENERAL ELECTRIC COMPANY

PLEASE PLACE ORDER NUMBER ON ALL PACKAGES, INVOICES AND MEMORANDA

CARE OF

H. I. Taylor 621 S. W. Alder Street Portland, Oregon

AND MAIL INVOICES IN TRIPLICATE TO GENERAL ACCOUNTING DEPT., 203 ELECTRIC BLDG.

YTITMAUÇ	DESCRIPTION	CODE	P	RICE	
,					
	Furnish all superintendence, labor, tools, equipment and transportation and perform all work required to move approximately 3,000 cu. yds. of fill material from Georgia-Pacific Corporatio property near Linnton, Oregon, to Portland Gener Electric Company Harborton Substation site.				
	Cost to PGE Co. per Crosswhite Excavating, Inc. proposal letter dated January 7, 1972:				
	Hauling and spreading fill material (actual truck measure)		1.10		Y.
	Move in and move out		65.00		
	Do not show on vendor's copy		236	3,50 Nat	10
				*	

SHIPMENT

At once

PORTLAND GENERAL ELECTRIC COMPAIN

CASH TERMS

Net

F. O. B.

FREIGHT ALLOWANCE

DIRECT TELEPHONE CALLS TO MR. C. G. Anderson

- Chad

PURCHASING AGENT

ITEM NO.	CODE	FUNCTION NO.	JOB NO.	CLASS	ACCOUNT NUMBER	REQUISITION NO.
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TO BE USED F	or Hai	borton Su	b site fi	11		

FEB 2 1972 CERDINATING DEPT.

CROSSWHITE ENTERPRISES, INC.

Bert's Redimix

Crosswhite Excavating
Crosswhite Sand & Gravel

774-3235

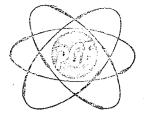
771-1148 771-1148

6641 S. E. JOHNSON CREEK BLVD. PORTLAND, DREGON 97206

Portland General Electric c/o H.I. Taylor 621 S.W. Alder Portland, Oregon

finance
TERMS: NET 10 E.O.M. - 1½% interest charged on past due accounts. 18% PER ANNUM

DATE	January 31, 1972	CHARG	E	CRED	IT	BALAN	ICE
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PORTLAND GENERAL ELECTRIC COMPANY

ELECTRIC BUILDING 621 S.W. ALDER STREET PORTLAND, OREGON 97205

RECEIVED

SEP 21 1972

September 21, 1972

D. R. MILLER, Manager SYSTEM ENGINEERING

Mr. D. B. Heath Manager - Contracts Burlington Northern Inc. 176 East Fifth Street St. Paul, Minnesota 55101

Dear Mr. Heath,

Thank you for preparing the agreement for our spur track to the Harborton Substation at Linnton, Oregon.

Mr. J. L. Williams has signed both copies for Portland General Electric Company and I have enclosed them for completion by the railway company.

Yours truly,

R. W. Sharp Permit Section Supervisor

RWS/nh Enclosure

bc: D. R. Miller

412 Thybin - Fuel Muddleston NOV 16 1972

COPIES TO: Williams Phillips, Bredemeier, Landis Original to General Accounting Department - 11/21

RECEIVED Southern Pacific Pipe Lines, Inc.

NOV 21 1972

JOSEPH C. WILLIAMS
VICE PRESIDENT

610 South Main Street, Los Angeles 90014

R. K SMITH PRESIDENT & GENERAL MANAGER

November 15, 1972

IN REPLY PLEASE REFER
TO FILE: 610. (SPPL-1126)

Mr. A. J. Porter Senior Vice President Portland General Electric Company Electric Building 621 S. W. Alder Street Portland, Oregon 97205

Dear Mr. Porter:

Please refer to your letter of October 31, 1972, accepting our offer for pipeline service to your plants at Harborton and Bethel.

In answer to your question regarding commencement of rental, although our proposal did not cover this point specifically, we plan to start the rental for each facility separately on a prorated basis on the 1st day of the month immediately following completion for operation. Proration of rental would be \$2,558/month for Bethel and \$3,667/month for Harborton, until such time as both facilities are operational, when the rental would then be the \$6,225/month mentioned in our previous letter. By handling in this manner, should we experience unusual delays on either facility we can still place the completed facility in operation.

If this arrangement meets with your approval would you please approve and return for our files the attached copy of this letter, and if there are further questions please do not hesitate to call on us.

We are expeditiously proceeding with construction at Bethel.

Sincerely, yours,

APPROVED:

Portland General Electric Co.

Porter, Senior Vice President

NOV 20 1972 Date:

ORTHWEST NATURAL GAS COMPANY

Wall

January 26, 1972

Portland General Electric Company 621 S.W. Alder Street Portland, Oregon 97205

Attention: Mr. Duane R. Landis, Project Coordinator,

Gas Turbine Project

Gentlemen:

This letter is a reply to the January 21, 1972 telephoned question of your Mr. Brad Spenser regarding our pipeline pressure expectations in the region of your gas turbine project near Harborton.

We anticipate that during any time that your proposed gas turbine plant would be using natural gas fuel our pipeline pressure would vary between 435 p.s.i.g. and 380 p.s.i.g. at a point on U.S. Highway 30 in front of your plant. We can furnish you a pressure of 300 p.s.i.g. at the downstream (flow-wise) end of our proposed meter set.

Enclosed is a map of our pipeline system in the vicinity of your Harborton location.

Very truly yours,

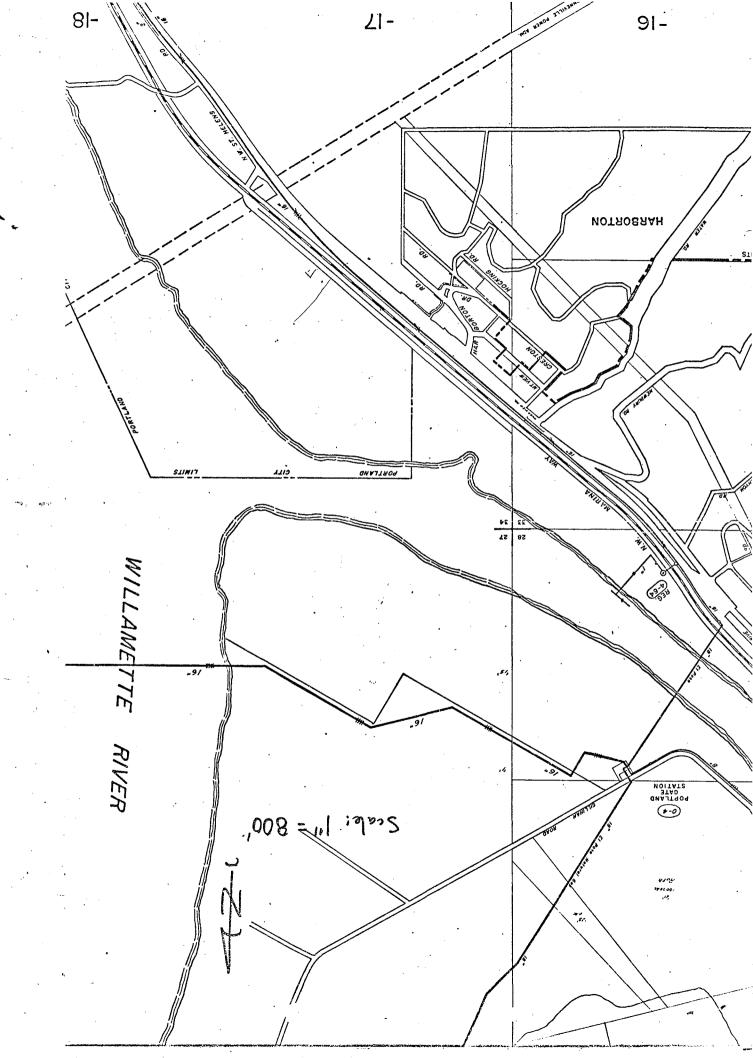
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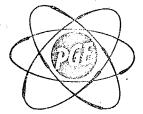
Manager, Engineering Department

Plade

CNP:JVB:f

Encl.





PORTLAND GENERAL ELECTRIC COMPANY

ELECTRIC BUILDING
621 S.W. ALDER STREET
PORTLAND, OREGON 97205

RECEIVED

1972

D. R. MILLER, Managen SYSTEM ENGINEERING

February 3, 1972 PT-5

Mr. Kurt E. Peterson Turbo Power & Marine Systems Farmington, Connecticut 06032

Dear Kurt:

GAS TURBINE PROJECT
Natural Gas Design Point Pressure
for Harborton Gas Turbines

After receiving the necessary information from Northwest Natural Gas, our gas suppliers, we have been able to complete the necessary calculations to determine a tentative design point pressure. From the calculations, we have found that the minimum pressure available to you at the inlet flange to your gas scrubber is 285 psig. The method of calculation used to determine this minimum gas pressure takes into consideration flow resistance due to 1,200 feet of 12-inch nominal size, Schedule 80 steel pipe, four 90° elbows, three gate valves, reducer and a Fisher Controls V-ball pressure regulator. For your reference, you will find enclosed the following: a schematic diagram of the piping layout, a copy of Northwest Natural Gas letter indicating their maximum/minimum and guaranteed pressure, and a Northwest Natural Gas data sheet giving average gas quality for the year 1971. Also enclosed is a map of Northwest Natural Gas lines near the Harborton site.

Sincerely,

D. R. Landis Engineering Coordinator Gas Turbine Project

DRL/BES/rd Enclosures

∨c: D. R. Miller

(W2)/\

GASTURBINE PROJECT NORTHWEST NATURAL GAS PIPING FOR BETHEL AND HARBORTON SITES

Meeting Notes April 26, 1972 8th Floor Conference Room Yeon Building

Representatives from Northwest Natural Gas Company and Portland General Electric Company met at 10:30 a.m. on April 26, 1972, to discuss piping requirements for the Bethel and Harborton gas turbine sites.

PGE has pressure requirements of 165 psi for starting, and 285 psi for running. NWNG is able to supply starting gas at the Bethel site at 175-180 psi. A 2-inch service would allow PGE to simultaneously start four units at Bethel. Some discussion followed on pressure drop within PGE supplied equipment. Brad Spencer will check pressure drop requirements to see if 175-180 psi is sufficient for starting. NWNG is able to supply regulated gas at up to 400 psi at the Harborton site.

PGE prefers only electrically trained personnel in a substation area. NWNG will locate meters as required by PGE, but must have access to their equipment at all times. Access is also necessary for a step van to check metering accuracy. NWNG also requires that no structures be built over their pipelines. A minimum easement of 10 feet was suggested. An enclosure of approximately 30' x 20' is required for NWNG terminal equipment (orifice, meters, etc.), and this enclosed area could be provided adjacent to the PGE fence line. The southwest property corner appears to be the best location at Bethel. The plan at Harborton is unfinished, but the southern property line appears to provide the best location. At both sites, PGE needs to supply piping from NWNG meters to gas turbine gas scrubbers. NWNG also requires one 120 Vac, 20a circuit for telemetering. NWNG will send sketches of typical meter installation requirements and noted that their responsibility for installation would end at the insulating flange of their meters. Cathodic protection will be supplied up to that point. NWNG will not contract to install service past their meters. NWNG also noted that starting gas and running gas at Harborton would require separate services.

NWNG questioned the difference in plant efficiencies for natural gas vs. liquid natural gas. PGE indicated that the plant efficiency would be the same in either case, but prefers natural gas. PGE supplied the following heat rates for either gas or oil: 10° - 11,200 BTU/KWH; 30° - 11,260 BTU/KWH.

NWNG indicated that construction of an SNG (substitute natural gas) plant is being considered, which could significantly alter the gas supply picture, as it relates to the gas turbine project. NWNG expects to have more information soon, and will present an energy supply proposal to PGE in 2 - 3 weeks. PGE indicated an interest in reviewing

the proposal at that time. NWNG questioned how long the turbines would be used, and PGE indicated that the turbines would be useful as a peaking resource over their economic life (30 years).

In regard to installation cost, NWNG indicated that the installations noted - service to the southern fence line at Harborton and 2" service to the southern fence line at Bethel - could be provided at no cost to PGE. PGE would have to provide pipeline from NWNG meters to PGE gas scrubbers.

Attendance:

John Van Bladeren	•	NWNG
Tom Krambuhl	•	NWŅG
Dick Dyer		PGE
S. R. Christensen		PGE
Ken Meeker		NWNG
D. R. Landis	•	PGE
B. E. Spencer		PGE
R. A. Kelson	•	PGE
L. J. Thoreen		PGE

Russ

c.c.: Attendance List

A. J. Porter

G. E. Bredemeier

W. A. Huddleston

F. Rogan

PORTLAND GENERAL ELECTRIC COMPANY



ELECTRIC BUILDING
621 S.W. ALDER STREET
PORTLAND, OREGON 97205

December 12, 1972

Northwest Natural Gas Company 123 N.W. Flanders Portland, Oregon 97209

Attention: Mr. Clyde Miller

Engineering Department

In response to your verbal request to our Mr. Chaddock we have questioned the supplier of our gas turbines as to gas requirements. Attached please find our letter No. PT-25, and Turbo Power & Marine Systems letter dated September 4, 1972.

With respect to Item 6 in the TP&M letter we would like to express our preference for Fisher type 310 pressure regulators.

Our schedule indicates a desired completion date of May 1, 1973, for the gas supply line at the Harborton location and also the start gas supply line at the Bethel site.

Please call us if you have any questions concerning the above.

Sincerely,

D. R. Landis

DRL:kb Enclosure

bc: B. E. Spencer

N. H. Burman

D. R. Miller

F

PORTLAND GENERAL ELECTRIC COMPANY

ELECTRIC BUILDING 621 S.W. ALDER STREET PORTLAND, OREGON 97205

December 21, 1972

Mr. Clyde Miller Northwest Natural Gas Company 123 N. W. Flanders Portland, Oregon

Dear Mr. Miller:

GAS TURBINE PROJECT Harborton and Bethel Fuel Gas Requirements

Our letter to you of December 5, 1972 concerning gas pressure requirements referred to certain attachments which were not attached.

This letter transmits these attachments to you.

Sincerely,

D. R. Landis

Engineering Coordinator Gas Turbine Project

DRL/ABC/nh Attachments urbo Power & Marine Systems SUBSIDIARY OF UNITED AIRCRAFT CORPORATION

TEL. (203) 677-4081

CONNECTICUT 06032

With the same of the December 4, 1972, Same of the sam នាក់ក្នុង នៃសេខ នាស់ស្គាល់ សម្រេចស្រាក ស្គ្រី សង្គម ស្គាល់ សម្រេច ស្គែល សំខាល់ សំខាល់ និង និងសេខ នឹងនេះ

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Attention:

Mr. D.R. Landis

... Engineering Coordinator

Gas Turbine Project

Subject:

तम् भारत्वेदेव राज्य कार्याद्वा प्राथिति प्र Gas Turbine Project of the policy derivative cost the

TPM Project 1340

William Control of the Control of th Natural Gas Requirements

Reference:

PGE letter PT-25, dated November 7, 1972

Common house of the second many

Gentlemen:

In response to the referenced letter, we wish to submit the following information, attached hereto, relative to the natural gas requirements at Harborton.

The following comments supplement the attachment:

Item 1

The nominal operating gas pressure at our gas scrubber is specified as 300psig with normal operation at approximately 235 psig. Depending on line losses, the gas company can set their regulator at 300psig.

- Items 2.3. Gas flows are shown on a per engine basis. We would assume and 4 that minimum gas flow would occur with (1) Twin Pac (2 engines) running at idle. We would also assume that maximum gas flow would occur with (4) Twin Pacs (8 engines) running at max peak.
- Item 5 TPM's relief valve on the gas scrubber is set at 350psig. Per our discussions with Mr. A. Chaddock, where it was agreed desirable to discharge relief gas away from the gas turbine area, the gas company's relief valve should be set lower than 350psig. The 325psig figure is suggested, however, the exact setting is Hexible providing the guideline that the gas company valve lift first is met.

MARKET SYSTEMB, DOT. Turbo Power & Marine Systems - - ox DEBURA A COM PENTION

BEARCHEAT THE

Portland General Electric Co.

Page 2

December 4. 1972

Bull amied May av

THE POSAL NO. 1340.

Item 6

Flei Gas C

Since we don't know the regulator types being considered. we can only make the following comments:

The pressure regulator range should be such that the regulator will handle the pressures available from the gas company, as well as the lowest gas pressure that See the engines can accommodate without load curtailment.

Require We are attaching Curve No. IPC-5270A, which was included in Proposal No. 1340. You will note the lowest pressure the engines can use without load curtailment is 255 psia at -10°F at the engine. The valve should at least handle pressures down to 255 -5psia at -10°F without loss of control. The pressure regulator should also be capable of maintaining pressure within -5psig at any set point throughout its range. We suggest you review this curve with the gas company for possible additional information.

If I can be of further assistance, please feel free to contact me.

Very truly yours,

TURBO POWER AND MARINE SYSTEMS, INC.

K.E. Peterson, Project Manager Applications Engineering

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TURBO POV R AND MARINE SYSTEMS, INC. SUBSIDIARY OF UNITED AIRCRAFT CORPORATION

PORTLAND GENERAL ELECTRIC CO.

PROPOSAL NO. 1340

TP4-2 (FT4C-1) Gas Turbine Twin Pac

. Estimated Megawatt Output and Required Fuel Gas Pressure Vs. Ambient Temperature

3" H2O Inlet and 1" H2O Exhaust Duct Pressure Losses

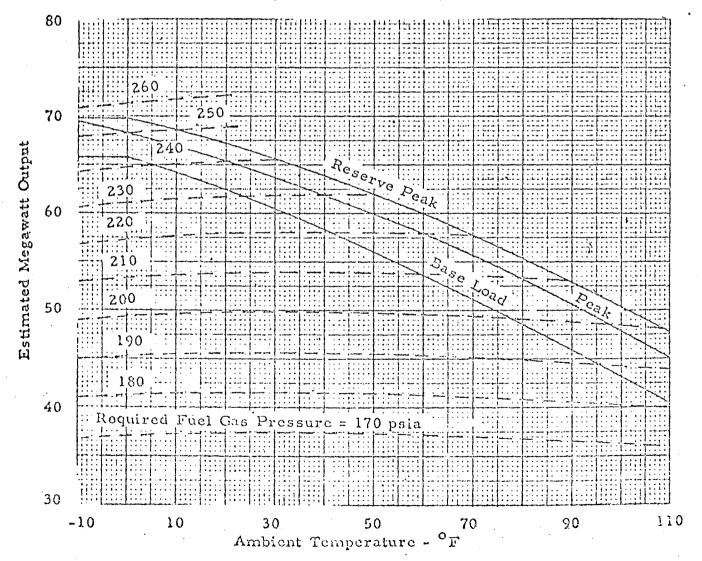
' Sea Level

 $N_3 = 3600 \text{ RPM}$

Required Fuel Gas Pressure based on:

Fuel Gas Temperature = 60° F Fuel LHV = 950 BTU/SCF

Ratio of Fuel Specific Heats = 1.33 Fuel Specific Gravity = 0.6



ITEM	50°F SEA LEVEL	-10°F SEA LEVEL
1. Pressure Set Point	300PSIG at Regulator Station	300PSIG at Regulator Station
2. Min. Gas Flow (Idle)	58,750 SCFH/Eng.	63,500 SCFH/Eng.
3. Max Gas Flow	416,500 SCFH/Eng.	457,000 SCFH/Eng.
4. Max Rate of Change or Gas Flow		
a. In Parallel Operating Mode	27 SCF/Sec. to 116 SCF/Séc. in 15 seconds (per engine)	30 SCF/Sec to 127 SCF/Eng. in 15 seconds (per engine)
b. In Isolated Operating Mode	27 SCF/Sec to 116 SCF/Sec in 6 seconds (per engine)	30 SCF/Sec to 127 SCF/Eng. in 6 seconds (per engine)
5. Desired Press. Set Point or Relief Valves at the Regulating Station	325 PSIG (TPM Relief Valve Set At 350 PSIG)	325 PSIG
6. Desired Pressure Regulator Range	To Be Selected by PGE say 200 to 350 PSIG	

POTE WAS MARB & BETHER

W. A. Huddleston

TELEPHONE CALL

COPIES TO:

S. R. Christensen

D. R. Miller

A. B. Chaddock

. **.**

To Carl Peterson of N.W. Natural Gas

Date February 1, 1973 Time

Subject SNG Plant Feedstock

Fuel-NWN Gas

The SNG feedstock will be natural gas liquids which are a raw gas condensate and resemble LPG.

The material has a reid vapor pressure of about 200 psi @ 100°F and is therefore stored at -50°F.

The makeup is:

C2H6 (Ethane) Max 5%

Propane & Bustane 95%

Pentane & heavier none

Maximum sulfur content is expected to be 15 gr/100 scf (about 185 ppm).

WAH/kjv

INTER-OFFICE COMMUNICATION PORTLAND GENERAL ELECTRIC COMPANY

SYSTEM CONTRACT CONSTRUCTION BRANCH

Date March 26, 1973

To S. R. Christensen

OF W

From

A. B. Chaddock

Subject

GAS TURBINE PROJECT

Northwest Natural Gas Company

Synthetic Natural Gas Plant Feedstock

In accordance with your request, I have contacted Northwest Natural Gas Company, Clyde Miller, who gave me the following information.

- 1. The feedstock for the SNG plant is described as a propanebutane mixture. It is received in liquid form from Canada where it is derived from gas stripping plants in the Canadian gas fields.
- It is stored in refrigerated liquid storage (low pressure).
 The configuration of the storage tank will either be the spherical type tank or the bullet type tank.
- 3. A portion of this feedstock will be vaporized and burned in their boilers for steam generation. No special measures or equipment are anticipated. NOTE: I would anticipate that this type of fuel would be burned in a similar fashion as high Btu refinery gas or chemical plant process gas.
- 4. They plan no conditioning of the gas prior to burning it in their boilers. There may be a slight fraction of sulfur in the gas but it is not felt this would be significant. Clyde will send us an analysis of the gas.

ABC/nh

c: D. R. Miller

R. L. Welch

W. A. Huddleston,



BURLINGTON NORTHERN

INDUSTRIAL AND REAL ESTATE DEVELOPMENT DEPARTMENT

Post Office Box 571
Portland, Oregon 97207
Telephone (503) XXXXXXX 221-1300

Coll to Welch 20 73

Mr. Roger W. Sharp Portland General Electric Company 621 S. W. Alder Street Portland, Oregon 97205 February 16, 1973

Dear Mr. Sharp:

In response to your recent request, we are now in receipt of engineering cost estimate for relocation of the turnout installed last summer to serve the electrical generating plant to locate in Linnton. Enclosed is engineering print showing present location marked in yellow, and proposed relocation and extension marked in red.

Cost for this work is broken down as follows:

Headblock to clearance point - 131 track feet
Relocation of turnout \$2,000
Additional cost for installation
in automatic crossing area 1,855
Grading 975
Extend 24" culvert 14 L.F. 425

Subtotal \$5,255

Clearance point to property line - 104.5 track feet
Grading \$2,337
Construct 104.5 feet of track 1,568

Subtotal \$3,905

Combining cost of \$5,255 for work in the initial turnout portion plus the \$3,905 cost to extend beyond to property line totals \$9,160 which should be submitted by check or purchase order to initiate the work. The new construction would result in having a refundable policy apply against a \$7,180 total in cost for the turnout area. This total can be recovered at the rate of \$10 per loaded car for which the BN receives a minimum revenue of \$50 and applies for a 5 year term following completion of the track, or sooner if fully recovered prior. Railroad would own and absorb maintenance costs for the 131 foot turnout portion. PGE would own remainder of track and reimburse railroad for maintenance performed between the 131 foot clearance point and property line, as well as absorb maintenance costs performed by private contractor beyond.

Similar to previous handling, please arrange preparation of the remittance specified in the amount of \$9,160 and express in your letter a willingness

Mr. Roger W. Sharp

- 2 -

February 16, 1973

on the part of Portland General Electric Company to execute our standard industrial track agreement.

If you have any questions, please contact this office.

Sincerely,

R. A. Lawrence

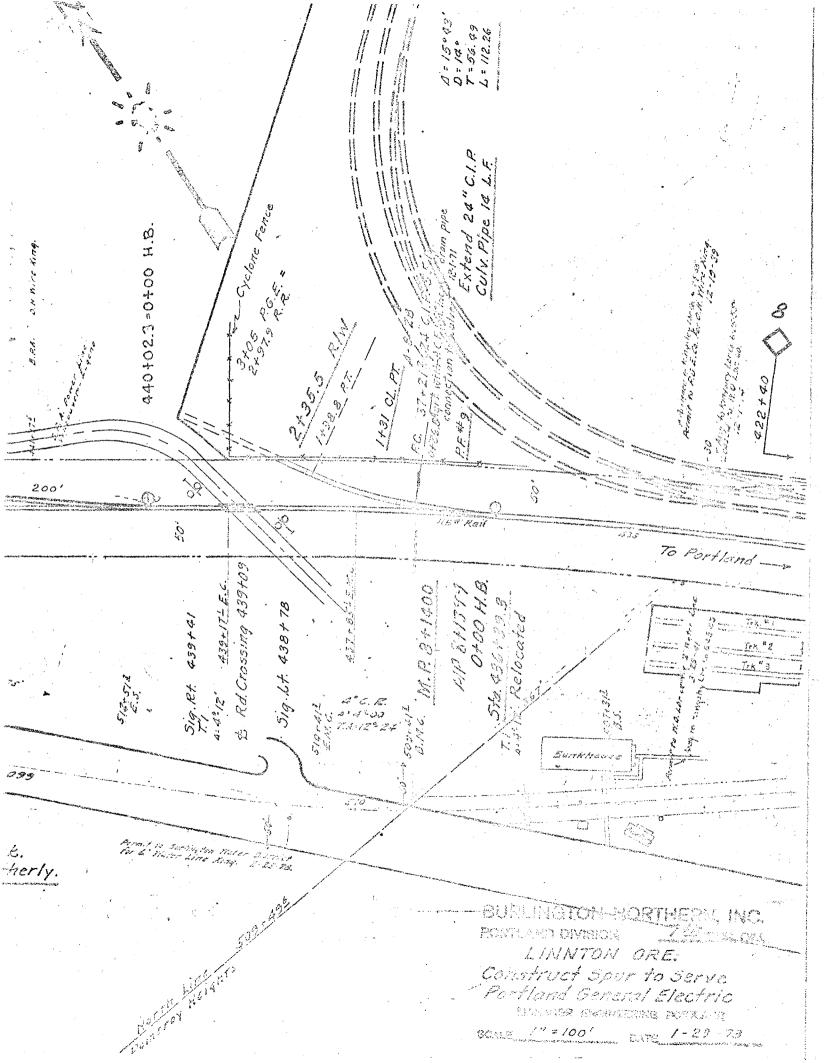
Regional Manager-Industrial Development

HWM/dar - - Attach.

File: 7th Sub-Linnton

R. a. Lawrence

P.S. Subsequent to writing this, you mentioned your company may be in a position to furnish the needed fill material. It is estimated 327 cubic yards are needed in the turnout portion and 785 cubic yards for the 104.5' track section beyond, making a total of 1, 112 cubic yards. By furnishing this quantity of fill materials, your costs would be reduced in the amount of \$2,779. Thus, should you elect to furnish the fill, your remittance should be \$6,381.



PORTLAND GENERAL ELECTRIC COMPANY

March 30, 1973

MEMORANDUM

TO:

A. J. Porter

FROM:

W. A. Huddleston

SUBJECT:

SPPL Oil Quality Restrictions

Recent discussions with the staff of Southern Pacific Pipe Lines, Inc. have brought to light the following restrictions which they place on product shipped via their multi-product pipeline:

- 1) The product <u>must</u> be a distillate.
- 2) Asphaltine content is limited to 50 ppm total and 25 ppm suspended.
- 3) API gravity > 30.
- 4) Color < ASA 4 (to be redefined).
- 5) Pour point: May 1 Sep. 31 . . . 25°F Oct 1 - Apr. 30 . . . 10°F
- 6) Minimal free water.

W. a Huddleston

WAH/kjv

cc G. E. Bredemeier

D. R. Miller

A. B. Chaddock/

N. H. Burman

c/ Shad, BRL, DAB - 9/14

SFP 1 3 1973

Southern Pacific Pipe Lines STEM CONTRACT CONSTRUCTION BRANCH

610 SOUTH MAIN STREET . LOS ANGELES, CALIFORNIA 90014

B. K. SMITH
President & General Manager

September 10, 1973

TELEPHONE (213) 624-9461 In reply please refer to FILE: 410.

Mr. A. J. Porter Senior Vice President Portland General Electric 621 S. W. Adler St. Portland, Oregon 97205

Dear Mr. Porter:

Since the inception of the Southern Pacific Pipe Lines' system, we have followed a policy of maximum flexibility of scheduling to permit shippers to make changes in their requests for volumes to move through the system and to make changes in suppliers. This policy resulted in many schedule changes which affected not only SPPL, but all the shippers as well. The present tight product situation has accentuated the problems created by this policy to the point that a number of shippers have requested a modification to limit changes resulting in schedule variations.

To provide a current understanding of our procedures for preparing schedules the following description is pertinent. SPPL schedules are designed to have a fixed number of cycles per month in an attempt to minimize both product degradation and cyclic distortion. In addition, in an attempt to maximize the utilization of terminal tankage, the same sequence of shippers' batches within each cycle is normally maintained. On a four-cycle-per-month pipeline operation, for example, each shipper should have four nearly equal sized batches of each grade of product enter the line at the source point every seven or eight days. This, in turn, would result in early equal sized deliveries of each grade of product at the various terminals with the same frequency. An exception to this would be in cases where four shipments would violate the tariff because of the size of the input batches or deliveries. In these cases, less frequent shipments would be in order; and they would normally be so positioned within the overall pipeline schedule, or schedules, to avoid distortion.

Even though the selection of each shipper's position with a cycle is arbitrary, to a certain extent, it is dependent upon batch distribution since batches are positioned to maximize the utilization of the pipeline's facilities. Under certain product distribution conditions involving intermediate breakout tankage locations, it may be expedient to pipeline utilization and/or operations to routinely depart, on a selected shipper product basis, from the normal maximum number of cycles per month. Thus, SPPL maintains the "right of cycling" prerogative.

The procedure for setting up schedules on all lines involves shippers of record submitting a written list of monthly volume requirements with suppliers indicated to SPPL by the 15th of the month prior to the month of the scheduled shipments. From this information schedules are prepared and furnished, as appropriate, to all suppliers, shippers of record, and companies to whom the product will be delivered. This requires establishing gathering line schedules as well as main line schedules.

The source of the current problems with schedule changes is threefold.

- 1) Tendered volumes are changed after submission.
- 2) Suppliers are not indicated on original or later submissions, or if suppliers are indicated they are subsequently changed.
- 3) Changes either in volumes or suppliers that must be made are too late for acceptable planning and shipper notification.

To overcome these problems with their adverse effect on everyone involved, we are proposing to place the following in effect on October 1, 1973.

- 1. Shippers of record must prepare in writing the volumes to be tendered with suppliers shown for all portions of the pipeline system for the subsequent month and assure delivery to SPPL no later than 5 PM on the 15th of each month.
- 2. Monthly schedules will be made from the above and sent to the shippers and suppliers, as appropriate, by the 25th of the month before the start of the schedule.
- 3. Following publication and distribution of the monthly schedule, a ten to twelve day schedule will be issued weekly to SPPL field locations in sufficient time for them to prepare gathering line schedules for an approximate 12-day period by 12:30 PM, Thursdays, except for variations due to holidays, with notification to shipper representatives of gathering and main line schedules as soon as possible thereafter.
- To make it possible to meet this timing, shippers will not be allowed to make changes in batch volumes or suppliers after 10 AM Wednesdays to cover the following 9-day period through Friday at 2400.

It is hoped the above will permit all shippers to plan their operations involved with the pipeline in a more orderly manner to the benefit of all. If questions arise, please contact Mr. C. B. Miller, Manager-Operations, or Mr. R. M. Breiner, Supervisor-Products Movement.

Very truly yours,

в. к. ѕмітн

City of Portland

DEPART NITHINGS 920124

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Contractor NORTHWEST FIELD SE	F-V ICES	
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Keep card conspicuously posted on premises until job is completed and final inspection made. Request for final must be made within 14 days after completion of work. Permit valid for 180 days only 791

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City of Portland FIRE PREVENTION DIVISION 55 S.W. Ash Street

Portland, OR 97204

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PRIOR TO BUILDING FINAL APPROVAL

PORTLAND GENERAL ELECTRIC COMPANY

LEGAL DEPARTMENT
121 SW SALMON STREET, 1WTC-13

ANN L. FISHER

ASSISTANT GENERAL COUNSEL

PORTLAND, OREGON 97204
TELEPHONE (503) 464-8457 FACSIMILE (503) 464-2200

April 13, 1993

Jeffrey Hobbing, President Columbia Asphalt 15333 JFK Blvd. #505 Houston, TX 77032

Jeffrey Hobbing, President Columbia Asphalt 11910 N.W. St. Helens Road Portland, OR 97231

Dear Mr. Hobbing:

Over the past several months, efforts have been made at your request to develop a new lease to replace the Agreement between Columbia Petroleum and PGE which automatically terminated on March 30, 1992. Despite these efforts, no agreement has been reached.

It has been over a year since the prior lease terminated and Columbia's continuing occupancy is without authority or right. Consequently, PGE insists that Columbia vacate the premises within thirty (30) days and restore the tanks and related equipment to a sound structural condition, clean and free of hazardous wastes or petroleum products. You will need to make arrangements with Mike Livingston for entry onto the premises. If these matters are not taken care within the thirty (30) days, PGE will assume the remaining equipment is abandoned and shall remove and dispose of it at Columbia's expense as well as proceeding with such other activities as necessary to avoid safety and/or environmental risks.

_ Please feel free to call Mike or me if you have any questions.

Yours very truly,

Ann L. Fisher

ALF:ck

c: Mike Livingston Wayne Lei INTER-OFFICE COMMUNICATION PORTLAND GENERAL ELECTRIC COMPANY

fuel 4-8

Date May 31, 1977

To

8-40-265

E. F. Wildfong

R. E. Sullivan

D. R. Miller

L. G. Curtright

J. E. Grund

N. K. Lilly

From

R. W. Sharp

Subject

AFC Industries Request to Open Harborton

Harborton Spur Track

Between the PUC's October 22, 1976 Notice of Non-Compliance and the decision to close the spur per Mr. Warner's (EM&C) letter of December 14, 1976, it was determined that PGE would not need the spur in the forseeable future.

I expect that AFC may have to improve the walkway on the south side of the spur between the fire training yard and the driveway to Harborton Substation. This could depend on what point the PUC would limit the switch crews work area. It may be at the Substation driveway, so the crew could check the string connection and/or pick up any cars that become disconnected.

I would appreciate any comment or recommendations that you may have.



ACF INDUSTRIES

SHIPPERS CAR LINE DIVISION

P.O. BOX 03468 97203

May 26, 1977

Mr George E. Hardy Public Utilities Commission Rail Division Labor and Industrial Building Salem, Oregon 97310

Dear Sir:

On St. Helens Road in Portland, Oregon just north of our plant, Portland General Electric has a spur track that has been closed. This spur was condemned by the Public Utilities Commission in January 1977. The reason for closing, I was told, was for improper walkway.

Our concern in this is that we used this track for storage of rail cars on a temporary basis. There is no loading or unloading being performed on these cars.

We are proposing that if you would consider reopening this spur we would clean all brush from tracks, put up a sign saying, "Switch Engine and Switch crew must not pass this point. We are saying it would not be necessary for any operation beyond that point. They could pull complete string of cars off track and switch without going beyond that point.

If you would consider this matter it would be most appreciated and would be an asset to our operation.

YOURS TRULY.

-11/1/er Grand Sullivan Cartwright Lilly

8-40-265

INTER-OFFICE COMMUNICATION PORTLAND GENERAL ELECTRIC COMPANY

Date June 6, 1977

To

E. F. Wildfong

R. E. Sullivan

D. R. Miller

L. C. Curtright

J. E. Grund

N. K. Lilly

From

R. W. Sharp

Subject

AFC Industries Request to Open Harborton Spur Track

Attached is the PUC response to Mr. Morgan's May 26, 1977 letter.

RWS/nh Attachment



Public Utility Commissioner of Oregon

LABOR & INDUSTRIES BUILDING, SALEM 97310 PHONE (503) 378-6217

June 3, 1977

J. L. Morgan, Plant Manager A C F Industries, Inc. P.O. Box 03468 Portland, OR 97203

RE: Industry No. 58-008-01, Portland General Electric, Harborton

Portland General Electric has chosen to remove their Marborton spur track from service for two reasons:
(1) impaired clearance and (2) nonstandard walkways. In addition Portland General Electric cited no intention to use this spur in the immediate future.

Your need for use of this spur and the matter of operation which you propose is acceptable to the staff of the Public Utility Commissioner with the understanding that no railroad crews would be permitted nor required to go beyond a certain point to be identified by a sign. Walkways and clearances will have to be standard up to the point of the sign however. We would propose a sign reading "Railroad employees not to operate beyond this point" on a sign approximately 11 inches by 14 inches with black letters and 3 inches high on a white background illuminated during hours of darkness be installed at the point where standard walkway and standard clearances are no longer maintained. In addition as you proposed brush should be cleared on both sides of the tracks to allow for proper visibility down the track in order for train crews to observe the movement of the cars.

It must be remembered, however, that if train crews are not permitted to enter the track beyond the point you designate, there may be operational difficulties unless strict adherence to track capacity is maintained. That is to say, without allowing crew members to work to the end of the track, it is altogether possible that unintentional movement beyond the track capacity may occur. We mention this matter only for your information and consideration.

J. L. Morgan Page 2 June 3, 1977

The conditions outlined above are quite similar to those outlined in your May 26, 1977, letter. If these matters are acceptable to you, we suggest you relate your intentions to Portland General Electric and that you both respond to us as to intended operations and restraints for our file. In receipt of these responses, we should have no problem with the operations you propose.

We certainly have no interest in curtailing your operations. However, we must be mindful of rail-road employee safety in these areas.

George E. Hardy, Jr. Administrator Rail Safety Division

smf

cc: Roger Sharp, PGE W. R. Windsor, O.P.U.C.